

Spitzer Space Telescope Observations of β Pictoris with IRS and MIPS

Christine Chen¹, J.E. Van Cleve², D.M. Watson³, J.R. Houck⁴, M.W. Werner¹,
K.R. Stapelfeldt¹, G.G. Fazio⁵, and G.H. Rieke⁶

(Email: christine.chen@jpl.nasa.gov)

¹Jet Propulsion Laboratory/California Institute of Technology, Pasadena, California

²Ball Aerospace and Technologies Corporation, Boulder, Colorado

³University of Rochester, Rochester, New York

⁴Cornell University, Ithaca, New York

⁵Harvard-Smithsonian Center for Astrophysics/Smithsonian Astrophysical Observatory,
Cambridge, Massachusetts

⁶Steward Observatory, University of Arizona, Tucson, Arizona

We have obtained Spitzer Space Telescope Infrared Spectrograph (IRS) and Multiband Imaging Photometer for Spitzer (MIPS) observations of the circumstellar dust around β Pictoris, a 12 Myr old main sequence A-type star at 19.3 pc from the Sun with an infrared excess discovered by IRAS. β Pictoris is one of the “Fabulous Four” debris disk objects (along with ϵ Eridani, Fomalhaut, and Vega) which is resolved at submillimeter wavelengths and is resolved with Spitzer. We present mid- and far-infrared images (16, 24, 70, and 160 μm) and spatially resolved spectra (5–40 μm) of the circumstellar dust and use these results to map the surface brightness profile, to determine the composition of the constituent dust grains, and to constrain the molecular hydrogen content of the disk.

